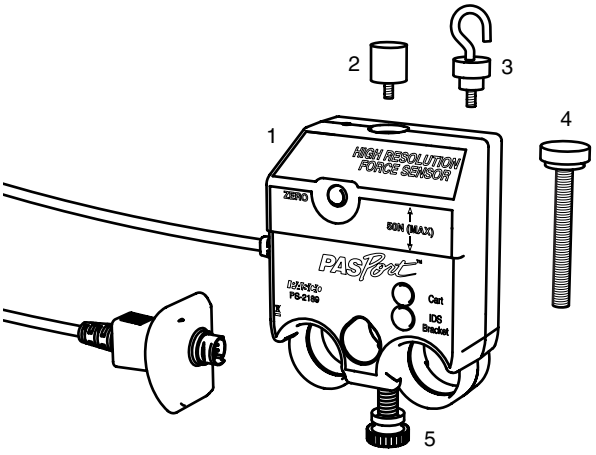
High Resolution Force Sensor

PS-2189



Included Parts

1. High Resolution Force Sensor
2. Bumper attachment
3. Hook attachment
4. Cart/Bracket thumbscrew (M5 × 45 mm)
5. Rod clamp thumbscrew (1/4-20 × 0.75 inch)

Additional Part Required

- PASPORT interface or datalogger

Quick Start

1. Connect the High Resolution Force Sensor to your PASPORT interface.

2. If you are using a computer, connect the PASPORT interface to it and start DataStudio.

3. Screw the hook attachment into the sensor.

4. Press or click the start button to begin recording data.

5. Push or pull the hook. The sensor measures the applied force.

Introduction

The High Resolution Force Sensor connects to a PASPORT interface or datalogger and records force in the range of −50 N to +50 N at a rate of up to 1000 samples per second. High resolution, dynamic over-sampling, and a low drift rate make the sensor well suited for measuring very small changes

Set-up

Connecting the Sensor to an Interface

1. Connect the sensor's plug to any port of a PASPORT interface or datalogger.

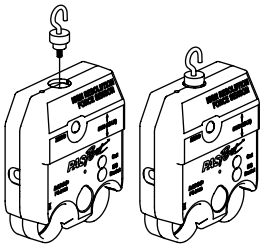
2. If you are using a computer, connect the PASPORT interface to it and start DataStudio.

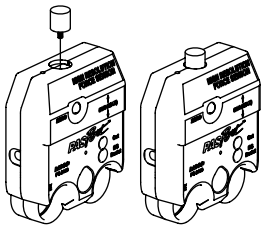
Zeroing the Sensor

Press the **ZERO** button on the sensor. The sensor's output is adjusted to read zero.

Connecting Bumper and Hook Attachments

Screw the bumper or hook into the sensor as illustrated.





About the Force Measurement

Dynamic Over-sampling

To increase the degree of dynamic over-sampling, lower the sample rate.

Over-sampling reduces noise, produces smoother data, and improves the measurement resolution. This effect is especially noticeable when very small force changes are measured. The

degree of over-sampling depends on the sample rate. Maximum over-sampling occurs at sample rates of 20 Hz and slower.

Sample Rate

By default, the sensor collects 10 samples per second. It can collect data as fast as 1000 samples per second and as slow as one sample every four hours. Change the sample rate in DataStudio or on your datalogger.

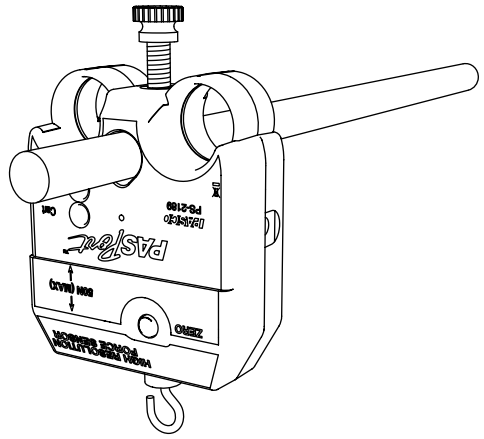
Inverted Output

By default, the sensor registers pushing as a positive force and pulling as a negative force. To register pulling as positive and pushing as negative, select the **Force (Inverted)** measurement in DataStudio or on your datalogger.

Sensor Mounting

Mounting the Sensor on a Rod

Slide the sensor onto a rod and secure it with the thumbscrew as illustrated.



Mounting the Sensor on a PASCO Cart

1. Insert the included Cart/Bracket thumbscrew through the hole in the senor labeled **Cart**.

2. Screw the thumbscrew into the threaded hole on the top of the cart.

Mounting the Sensor on an IDS Bracket

1. Insert the included Cart/Bracket thumbscrew through the hole in the IDS Force Accessory Bracket (PASCO part CI-6545).

2. Screw the thumbscrew into the hole in the sensor labeled **IDS Bracket**.

Specifications

Range	±50 N
Resolution	0.002 N
Maximum Sample Rate	1000 samples/s

Technical Support

For assistance with any PASCO product, contact PASCO at:

Address: PASCO scientific
10101 Foothills Blvd.
Roseville, CA 95747-7100

Phone: 916-786-3800 (worldwide)
800-772-8700 (U.S.)

Fax: (916) 786-7565

Web: www.pasco.com

Email: support@pasco.com

For more information about the High Resolution Force Sensor and the most up-to-date version of this Instruction Sheet, visit:

www.pasco.com/go?PS-2189

Limited Warranty For a description of the product warranty, see the PASCO catalog.

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